

Claims

1. A hinge assembly comprising:
 - a claw;
 - a channel pivotally connected to the claw at a first pivot point and adapted for movement on an arc in a first direction and in a second direction opposite said first direction, said channel movable from a first operative position in said first direction to a second operative position, and further in said first direction to a break-away position;
 - a link control member connected to said channel;
 - a spring having first and second ends, said second end operably engaged with said channel;
 - a single link member defining first and second opposite contact surfaces and first and second opposite ends, said first end pivotally connected to said claw and said second end operably engaged with said first end of the spring, said second contact surface of said link member abutting said link control member and defining: (i) a peak; (ii) an operative surface portion on a first side of said peak that cooperates with said peak to define a first dwell point; and, (iii) a break-away surface portion on a second side of said peak, wherein said link member is movable relative to said link control member in response to pivoting movement of said channel relative to said claw, and wherein: (i) said link control member is in contact with said operative surface portion of said link when said channel is located in said first operative position; (ii) said link control member is located in said first dwell point when said channel is located in said second operative position; and, (iii) said link

control member is in contact with said break-away surface portion of said link when said channel is located in said break-away position.

5 2. The hinge assembly as set forth in claim 1, wherein peak of said link engages said link control member to inhibit movement of said link and said channel when said channel moves from said second operative position to said break-away position.

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3. The hinge assembly as set forth in claim 1, wherein said break-away surface portion of said link comprises a second dwell point in which said link control member is seated when said channel is located in said break-away position.

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4. The hinge assembly as set forth in claim 3, wherein said second dwell point is defined by cooperating portions of said break-away surface portion and said peak.

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5. The hinge assembly as set forth in claim 1, wherein said first dwell point is partially defined by a first face of said peak, and wherein said break-away surface portion is flat and defines a second face of said peak.

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6. The hinge assembly as set forth in claim 1, wherein said second contact surface of said link further comprises a projecting lobe spaced from said first dwell point, said projecting lobe contacting said link control member when said channel is located in said first operative position.

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7. The hinge assembly as set forth in claim 6, wherein
said channel member is movable to an intermediate broil-stop
position between said first operative position and said second
operative position, said projecting lobe contacting said link
5 control member when said channel member is located in said
intermediate broil-stop position.

8. The hinge assembly as set forth in claim 1, further
comprising a link stop connected to said channel, wherein said
10 link contacts said link stop when said channel is located in
said break-away position to prevent movement of said channel
in said first direction beyond said break-away position.

9. The hinge assembly as set forth in claim 8, wherein
15 said link is located between and engaged with both said link
stop and said link control member when said channel is located
in said break-away position.

10. The hinge assembly as set forth in claim 8, wherein
20 said channel is pivotally connected to said claw at said first
pivot point by a fastener, and wherein said link stop is at
least partially defined by said fastener.

11. The hinge assembly as set forth in claim 10, wherein
25 said fastener comprises a rivet, and wherein said link stop
comprises said rivet and a member coaxially mounted on said
rivet.

12. An oven comprising:

a frame;

a door;

at least one hinge assembly that movably connects said

5 door to said frame, said at least one hinge assembly comprising:

a claw connected to said frame;

a channel connected to said door and pivotally connected to the claw at a first pivot point and adapted for movement on

10 an arc in a first direction and in a second direction opposite said first direction, said channel movable from a first operative position in said first direction to a second operative position, and further in said first direction to a break-away position, wherein: (i) said first operative

15 position corresponds to a fully closed position of said door relative to said frame; (ii) said second operative position corresponds to a fully open operative position of said door relative to said frame; and, (iii) said break-away position corresponds to a non-operative over-open position of said door

20 relative to said frame where said door is non-horizontal;

link control member connected to said channel;

a spring having first and second ends, said second end operably engaged with said channel;

a single link member defining first and second opposite

25 contact surfaces and first and second opposite ends, said first end pivotally connected to said claw and said second end operably engaged with said first end of spring, said second contact surface of said link member abutting said link control member and defining: (i) a peak; (ii) an operative surface

30 portion on a first side of said peak that cooperates with said

peak to define a first dwell point; and, (iii) a break-away surface portion on a second side of said peak, wherein said link member is movable relative to said link control member in response to pivoting movement of said channel relative to said 5 claw, and wherein: (i) said link control member is in contact with said operative surface portion of said link when said channel is located in said first operative position; (ii) said link control member is located in said first dwell point when said channel is located in said second operative position; 10 and, (iii) said link control member is in contact with said break-away surface portion of said link when said channel is located in said break-away position.

13. The oven as set forth in claim 12, wherein an angle 15 of 90 degrees or less is defined between said first and second operative positions of said channel member, and wherein an angle of greater than 90 degrees is defined between said first operative position and said break-away position.

20 14. The oven as set forth in claim 12, wherein said break-away surface portion of said link comprises a second dwell point in which said link control member is seated when said channel is located in said break-away position.

25 15. The oven as set forth in claim 12, wherein said second dwell point is defined by cooperating portions of said break-away surface portion and said peak.

16. The oven as set forth in claim 9, wherein said hinge assembly further comprises a link stop connected to said channel, wherein said link contacts said link stop when said channel is located in said break-away position to prevent 5 movement of said channel in said first direction beyond said break-away position.

17. The oven as set forth in claim 16, wherein said link is located between and engaged with both said link stop and 10 said link control member when said channel is located in said break-away position.

18. A hinge assembly for connecting an appliance door to an appliance frame, said hinge assembly comprising:

15 a claw;
a channel pivotally connected to said claw;
a single link member pivotally connected to said claw, said link member defining first and second contact surfaces, wherein said second contact surface defines an operative portion and a break-away portion separated from said operative 20 portion by a peak that projects outwardly from said second contact surface;

a spring operably engaged between said link member and said channel; and,

25 a link control member connected to said channel and contacting said second contact surface of said link member, wherein said channel is movable from a first operative position in a first direction on arc of 90 degrees or less to a second operative position where said link control member is 30 in contact with said operative portion of said second contact

surface of said link, and wherein said channel is movable from said second operative position further in said first direction to a break-away position that is more than 90 degrees from said first operative position where said link control member 5 is in contact with said break-away portion of said second contact surface of said link.

19. The hinge assembly as set forth in claim 18, wherein said hinge assembly further comprises a link stop connected to 10 said channel and located coaxially with an axis about which said channel pivots relative to said claw, wherein said first contact surface of said link contacts said link stop when said channel is located in said break-away position.

15 20. The hinge assembly as set forth in claim 19, wherein said link is located between and engaged with both said link stop and said link control member when said channel is located in said break-away position.